

## IN THE CLAIMS

Please cancel claims 2, 4, 7, and 23-30 without prejudice to the subject matter therein.

Please amend the claims as follows:

1. (currently amended) Method for forming an article comprising closed cell microfoam from thermoplastic, wherein at least one molten thermoplastic ~~comprising~~ containing a foaming agent is subjected under pressure to a forming operation and, after the pressure has been at least partially released using a controlled pressure drop rate, is cooled, wherein the ~~amount of foaming agent is substantially identical to the amount corresponding to that quantity of gas incorporated in the foaming agent which is comprised by a close packed structure of the foam cells having a foam cell diameter, which is substantially uniform throughout the foam~~ foaming agent is a physical foaming agent and used in a maximum weight fraction

$$X = \rho_{\text{gas}} / \rho_{\text{thermoplast}}$$

wherein  $\rho_{\text{gas}}$  is the density of the physical foaming agent used and  $\rho_{\text{thermoplast}}$  is the density of the thermoplastic concerned, both densities expressed in  $\text{kg/m}^3$  and the relative density of the foam ( $\rho_{\text{foam}}/\rho_{\text{thermoplast}}$ ) being about 0.5, and wherein the pressure drop rate ( $dP/dt$ ) is controlled according to the following equation:

$$dP/dt > (\beta R_o C_{ba}^2) / (\eta H^2)$$

wherein  $\beta$  is a proportionality factor,  $R_o$  is the critical cell radius in m,  $C_{ba}$  is the concentration of blowing agent in  $\text{g/cm}^3$ ,  $\eta$  is the viscosity of the melt in  $\text{Pa}\cdot\text{s}$ ,  $H$  is Henri's constant, and  $dP/dt$  is expressed in  $\text{Pa/sec}$  with the proviso that in any case  $dP/dt \leq 50 \text{ MPa/sec}$ .

2. (cancelled)

3. (previously presented) Method according to claim 2, wherein the foaming agent is a physical foaming agent selected from the group consisting of carbon dioxide, nitrogen, air, oxygen, noble gases, water and isoalkanes.

4. (cancelled)

5. (original) Method according to claim 3, wherein the foaming agent is nitrogen and is used in the processing of polypropylene in an amount of about 0.12% based on the weight of the thermoplastic.

6. (original) Method according to claim 3, wherein the foaming agent is carbon dioxide and is used in the processing of polypropylene in an amount of about 0.19% based on the weight of the thermoplastic.

7. (cancelled)

8. (currently amended) Method according to claim 7 1, wherein for preparing a polypropylene foam  $dP/dt$  at 180°-190°C is set at  $\geq 20$  MPa/sec. and at 170-175°C at  $\geq 10$  MPa/sec, in any case however  $dP/dt \leq 50$  MPa/sec.

9. (original) Method according to claim 1, wherein the method is an extrusion method wherein at least one stream of thermoplastic is forced under pressure through an orifice, which gives the object to be formed its shape, and is then cooled, and wherein at least one stream comprises a

foaming agent.

10. (original) Method according to claim 1, wherein a nucleation agent is present in the thermoplastic.

11. (original) Method according to claim 10, wherein a nucleating agent having an aspect ratio of between 5 and 100 is used.

12. (previously presented) Method according to claim 10, wherein the nucleating agent used is talc having a mean particle size of  $> 3$  micrometers.

13. (original) Method according to claim 10, wherein the concentration of nucleating agent is chosen in conjunction with the desired mean foam-cell diameter.

14. (original) Method according to claim 12, wherein the nucleating agent used is talc in amounts suitable for the foam-cell diameter of polypropylene to be formed as follows:

Wt% of filler	Mean foam-cell diameter in micrometres
2.5	300-500
5	150-250
10	80-120
20	40-60
40	20-30

15. (original) Method according to claim 12 for forming a polyvinylchloride foam wherein 3 up to 5 or more weight % of talc is used to obtain a foam having a mean foam cell diameter of about 50  $\mu\text{m}$ .

16. (original) Method according to claim 1, wherein the thermoplastic is admixed with an agent which improves the impact resistance of the plastic (an impact modifier).

17. (previously presented) Method according to claim 16, wherein the plastic is polypropylene and the impact modifier is selected from the group of polymeric modifiers such as low-crystallinity PP, LDPE, ABS, MBS, EVA, chlorinated PE and mixtures thereof, and the agent or mixture of agents is used in a concentration of 2-40 wt. %, based on the weight of the thermoplastic.

18. (previously presented) Method according to claim 1, wherein the thermoplastic is admixed with a surface-active agent.

19. (previously presented) Method according to claim 18, wherein the surface-active agent is selected from the group consisting of fatty alcohols, esters based on dicarboxylic acids and natural short-chain fats/alcohols, esters of alcohols and long-chain fatty acids and mixtures thereof, and wherein the surface active agent is used in a concentration of 0.1 – 5 wt. % based on the weight of the thermoplastic.

20. (previously presented) Method according to claim 19, wherein the surface-active agent is used in a concentration of 0.3-3 wt. %.

21. (original) Method according to claim 9, wherein the formed article is a pipe whose inner and/or outer walls have a foam-cell diameter of less than 10 micrometres.

22. (original) Method according to claim 9, wherein the formed article is a pipe and, to form a completely tight inner and outer wall of the pipe, the method is implemented as a coextrusion method and the stream of thermoplastic for the inner and outer wall is supplied free from gas, whereas gas and nucleation agent are fed into the stream for the part between the inner and outer walls to adjust the foam-cell diameter therein to a predetermined value by choosing the concentration of nucleation agent.

23-31. (cancelled)

32. (previously presented) Method according to claim 10, wherein the nucleating agent is talc.

33. (previously presented) Method according to claim 32, where said talc has a mean particle size > 10 micrometers.

34. (previously presented) Method according to claim 19, where the surface-active agent is used in a concentration of 0.5-2 wt. %.

35. (previously presented) Method according to claim 16, wherein the plastic is polypropylene and the impact modifier is selected from the group of polymeric modifiers such as low-crystallinity PP, LDPE, ABS, MBS, EVA, chlorinated PE and mixtures thereof, and the agent or mixture of agents is used in a concentration of 5-15 Wt. %, based on the weight of the thermoplastic.

Please add the following new claims:

36. (new) Method according to claim 1, wherein the thermoplastic is selected from the group consisting of polypropylene, polyethylene, poly(vinyl)chloride, polystyrene, and ABS.

37. (new) Method according to claim 1, wherein the thermoplastic is polypropylene and the foaming agent is selected from the group consisting of nitrogen and carbon dioxide, and used in an amount of between 0.035 and 0.12% based on the weight of polypropylene for nitrogen and between 0.10 and 0.19% based on the weight of polypropylene for carbon dioxide.

38. (new) Method according to claim 1, wherein the foaming agent is used in an amount of 0.05-0.10% based on the weight of polypropylene for nitrogen and 0.10-0.15% based on the weight of polypropylene for carbon dioxide.

39. (new) Method according to claim 1, wherein the thermoplastic is poly(vinyl) chloride and the foaming agent is selected from the group consisting of nitrogen and carbon dioxide, and used in a maximum amount of about 0.08 wt. % for nitrogen and 0.12 wt. % for carbon dioxide.